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Exercise - I (Conceptual Questions) Build Up Your Understanding

INTRODUCTION TO DEVELOPMENT

1. Auxanometer is meant for measuring -
(1) Respiratory activity
(2) Photosynthetic activity
(3) Growth activity
(4) Osmotic pressure

2. In plants growth is -
(1) Restricted to certain regions or structure
(2) Irreversible
(3) Change in size
(4) All the above

3. Plant growth is primarily affected by two climatic factors which are :-
(1) Light and temperature
(2) Temperature and relative humidity
(3) Light and wind
(4) Rainfall and temperature

4. In a growing plant, the first phase during the process of growth is -
(1) Cell division (2) Cell enlargement
(3) Cell differentiation (4) Cell maturation

5. The maximum growth rate occurs in :-
(1) Exponential phase (2) Stationary phase
(3) Senescent phase (4) Lag phase

PLANT GROWTH REGULATORS TO SEED DORMANCY

6. Primary precursor of I.A.A is :-
(1) Phenyl alanine (2) Tyrosine
(3) Tryptophan (4) Leucin

7. The biological activity of I.A.A is tested by :-
(1) α-amylase test
(2) Avena curvature test
(3) Endosperm activity test
(4) Chlorophyll preservation test

8. Indole, 3 acetic acid, called as auxin was first isolated from :-
(1) Human urine (2) Corn germ oil
(3) *Fusarium* (4) *Rhizopus*

9. Stem elongation is affected by :-
(1) Gibberellin and florigen
(2) Auxin and gibberellin
(3) Florigen and kinin
(4) Kinin and auxin

10. Apical dominance means :-
(1) Suppression of growth of apical bud by axillary buds
(2) Suppression of growth of axillary buds by the presence of apical bud.
(3) Stimulation of growth of axillary buds by removal of apical bud
(4) Inhibition of growth of axillary buds by removal of apical bud.

11. Which of the following is not a natural occuring plant hormone ?
(1) 2, 4 - D (2) GA_2
(3) Gibberellin (4) I.A.A

12. Auxin is mainly produced by -
(1) Apical root meristem
(2) Root cambium
(3) Apical shoot meristem
(4) Phloem in shoot tip

13. Plants bend toward the light because -
(1) They need light for photosynthesis
(2) They need light for respiration
(3) Light attracts them
(4) Cells on the shaded side elongate more

14. Growth hormone acts -
(1) Always as growth promoters
(2) Always as growth inhibitors
(3) Some as promoters and some as inhibitors
(4) Rarely as growth inducers

15. The movement of auxin is -
(1) Acropetal (2) Basipetal
(3) Lateral (4) Centripetal

16. Which growth hormone is responsible for apical dominance ?
(1) Auxin (2) Cytokinin
(3) Gibberellin (4) Ethylene

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17. Which of the following induces femaleness in plants ?
(1) Ethylene (2) Ethanol
(3) ABA (4) Gibberellin

18. Agent orange is-
(1) Biodegradable insecticide
(2) Dioxin weedicide (2,4-D + 2,4,5-T)
(3) Biofertilizer
(4) Biopesticide

19. Richmond - Lang effect is due to :-
(1) Cytokinin (2) Auxin
(3) ABA (4) Ethylene

20. Photoperiodic stimulus is picked up by :
(1) Phytochrome
(2) Phytohormone
(3) Enzyme
(4) Vernalin

21. Which of the following plant hormone substitutes for long photoperiod in flowering plant ?
(1) Auxin (2) Gibberellin
(3) Cytokinin (4) Ethylene

22. Cytokinin -
(1) Is a hormone whose main function is to induce the cell division
(2) Induce bolting
(3) Induce senescence
(4) Causes dormancy

23. Bolting hormone is -
(1) Auxin (2) Gibberellin
(3) ABA (4) Ethylene

24. Gibberellins do not cause -
(1) Shortening of genetically tall plants
(2) Stimulation of seed germination
(3) Promotion of parthenocarpy
(4) Induction of α-amylase synthesis in barley

25. Gibberellins can promote seed germination because of their influence on :
(1) Rate of cell division
(2) Production of hydrolyzing enzymes
(3) Synthesis of abscisic acid
(4) Absorption of water through hard seed coat.

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26. Which of the following is a coconut milk factor ?
(1) Auxin (2) ABA
(3) Morphactin (4) Cytokinin

27. In germinating seeds Amylase, Proteases, Lipases are stimulated by :-
(1) Auxin (2) Gibberellin
(3) Cytokinin (4) Ethylene

28. Which one of the following is a gaseous plant hormone ?
(1) Auxin (2) Gibberellin
(3) Ethylene (4) Cytokinin

29. Apical dominance can be overcome by application of :–
(1) Auxin (2) Gibberellin
(3) Cytokinin (4) Florigen

30. Dormancy of seed is broken by :-
(1) Auxin (2) Gibberellins
(3) Ethylene (4) Cytokinin

31. In tissue culture, differentiation of shoot is controlled by :-
(1) Light Intensity
(2) Temperature shock
(3) Low Auxin to high CK ratio
(4) High auxin to low CK ratio

32. Among the following which helps in ripening of fruits?
(1) Methane (2) Ethylene
(3) CO_2 (4) CO

33. Abscisic acid induces :-
(1) Shoot elongation
(2) Cell elongation and cell wall formation
(3) Cell division
(4) Leaf fall and dormancy

34. Which of the following is growth inhibitor ?
(1) IAA (2) ABA
(3) NAA (4) GA_3

35. Abscisic acid treatment results in -
(1) Leaf expansion
(2) Stem elongation
(3) Stomatal closure
(4) Root elongation

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36. Natural cell division inducing factor occurs in-
(1) Coconut milk
(2) Immature maize seeds
(3) Both (1) and (2)
(4) Heated t - RNA

37. Which is a stress hormone ?
(1) Benzyl aminopurine (BAP)
(2) Dichlorophenoxy acetic acid
(3) Ethylene
(4) Abscisic acid

38. Seed dormancy is due to the :-
(1) Ethylene (2) Abscisic acid
(3) IAA (4) Starch

39. Hormone responsible to induce senescence:–
(1) ABA (2) Auxin
(3) GA (4) Cytokinin

40. Long day plants produce flowers when they exposed to :-
(1) Any duration of light
(2) Light period longer than a critical day length
(3) Light period longer than 12 hrs.
(4) Short photoperiods than critical day length

41. Which plant is LDP ?
(1) *Tobacco* (2) *Glycine max.*
(3) *Xanthium* (4) *Spinach*

42. Wheat & henbane are :-
(1) SDP (2) DNP
(3) LNP (4) LDP

43. In short day plants (SDP) flowering is induced by:-
(1) Long night
(2) Photoperiod less than 12 hours
(3) Photoperiod shorter than critical value and unniterrupted long night.
(4) Long photoperiod and interrupted long night.

44. Which pigment absorbs the red and far–red light?
(1) Cytochrome (2) Phytochrome
(3) Carotenoid (4) Chlorophyll

45. Cell elongation in internodel regions of the green plants takes place due to :-
(1) Ethylene
(2) Indole acetic acid
(3) Cytokinin
(4) Gibberellins

EXERCISE-I (Conceptual Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	3	4	1	1	1	3	2	1	2	2	1	3	4	3	2
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	1	1	2	1	1	2	1	2	1	2	4	2	3	3	2
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	2	2	4	2	3	3	4	2	1	2	4	4	3	2	4

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Exercise - II (Previous Year Questions) AIPMT/NEET

AIPMT 2006

1. How does pruning help in making the hedge dense
(1) The apical shoot grows faster after pruning
(2) It releases wound hormones
(3) It induces the differentiation of new shoots from the rootstock
(4) It frees axillary buds from apical dominance

2. Parthenocarpic tomato fruits can be produced by?
(1) raising the plants from vernalized seeds
(2) treating the plants with phenylmercuric acetate
(3) removing androecium of flowers before pollen grains are released
(4) treating the plants with low concentrations of gibberellic acid and auxins

3. An enzyme that can stimulate germination of barley seeds is
(1) Protease (2) Invertase
(3) α-amylase (4) Lipase

AIPMT 2007

4. Which one of the following pairs, is not correctly matched?
(1) IAA - Cell wall elongation
(2) Abscisic acid – Stomatal closure
(3) Gibberellic acid – Leaf fall
(4) Cytokinin – Cell division

5. The wavelength of light absorbed Pr form of phytochrome is: -
(1) 620 nm (2) 640 nm
(3) 680 nm (4) 720 nm

6. "Foolish seeding" disease of rice led to the discovery of: -
(1) IAA (2) GA
(3) ABA (4) 2, 4-D

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AIPMT 2008

7. Senescence as an active developmental cellular process in the growth and functioning of a flowering plant, is indicated in: -
(1) Annual plants
(2) Floral parts
(3) Vessels and tracheid differentiation
(4) Leaf abscission

8. Importance of day length in flowering of plants was first shown in: -
(1) Cotton (2) Petunina
(3) Lemna (4) Tobacco

AIPMT 2009

9. One of the synthetic auxin is: -
(1) IAA (2) GA
(3) IBA (4) NAA

10. Which one of the following acids is a derivative of carotenoids?
(1) Indole–3–acetic acid
(2) Gibberellic acid
(3) Abscisic acid
(4) Indole butyric acid

11. The annular and spirally thickened conducting elements generally develop in the protoxylem when the root or stem is: -
(1) Differentiating (2) Maturing
(3) Elongating (4) Widening

Pre-AIPMT 2010

12. Phototropic curvature is the result of uneven distribution of:
(1) Gibberellin (2) Phytochrome
(3) Cytokinins (4) Auxin

13. Photoperiodism was first characterised in:
(1) Tobacco (2) Potato
(3) Tomato (4) Cotton

Mains-AIPMT 2010

14. Root development is promoted by:
(1) Auxin (2) Gibberellin
(3) Ethylene (4) Abscisic acid

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Mains-AIPMT 2012

15. Which one of the following generally acts as an antagonist to gibberellins?
(1) ABA (2) IAA
(3) Zeatin (4) Ethylene

16. Vernalisation stimulates flowering in:
(1) Carrot (2) Ginger
(3) Zamikand (4) Turmeric

17. Through their effect on plant growth regulators, what do the temperature and light control in the plants?
(1) Closure of stomata (2) Fruit elongation
(3) Apical dominance (4) Flowering

AIPMT 2014

18. Dr. F. Went noted that if coleoptile tips were removed and placed on agar for one hour, the agar would produce a bending when placed on one side of freshly-cut coleoptile stumps. Of what significance is this experiment?
(1) It made possible the isolation and exact identification of auxin.
(2) It is the basis for quantitative determination of small amounts of growth-promoting substances.
(3) It supports the hypothesis that IAA is auxin.
(4) It demonstrated polar movement of auxins.

19. A few normal seedlings of tomato were kept in a dark room. After a few days they were found to have become white-coloured like albinos. Which of the following terms will you use to describe them?
(1) Mutated (2) Embolised
(3) Etiolated (4) Defoliated

20. Which one of the following growth regulators is known as stress hormone?
(1) Abscissic acid
(2) Ethylene
(3) GA_3
(4) Indole acetic acid

AIPMT 2015

21. Typical growth curve in plants is: -
(1) Linear
(2) Stair-steps shaped
(3) Parabolic
(4) Sigmoid

22. What causes a green plant exposed to the light on only one side, to bend toward the source of light as it grows?
(1) Green plants seek light because they are phototropic
(2) Light stimulates plant cells on the lighted side to grow faster
(3) Auxin accumulates on the shaded side, stimulating greater cell elongation there.
(4) Green plants need light to perform photosynthesis

Re-AIPMT 2015

23. Auxin can be bio assayed by:
(1) Lettuce hypocotyl elongation
(2) Avena coleoptile curvature
(3) Hydroponics
(4) Potometer

NEET-I 2016

24. The Avena curvature is used for bioassay of:
(1) ABA (2) GA_3
(3) IAA (4) Ethylene

NEET-II 2016

25. You are given a tissue with its potential for differentiation in an artificial culture. Which of the following pairs of hormones would you add to the medium to secure shoots as well as roots?
(1) Auxin and abscisic acid
(2) Gibberellin and abscisic acid
(3) IAA and gibberellin
(4) Auxin and cytokinin

26. Phytochrome is a:
(1) Lipoprotein (2) Chromoprotein
(3) Flavoprotein (4) Glycoprotein

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NEET-UG 2017

27. Fruit and leaf drop at early stages can be prevented by the application of:
(1) Ethylene (2) Auxins
(3) Gibberellic acid (4) Cytokinins

NEET-UG 2019

28. What is the site of perception of photoperiod necessary for induction of flowering in plants?
(1) Lateral buds (2) Pulvinus
(3) Shoot apex (4) Leaves

29. It takes very long time for pineapple plants to produce flowers. Which combination of hormones can be applied to artificially induce flowering in pineapple plants throughout the year to increase yield?
(1) Auxin and Ethylene
(2) Gibberellin and Cytokinin
(3) Gibberellin and Abscisic acid
(4) Cytokinin and Abscisic acid

NEET-UG [Odisha] 2019

30. Removal of shoot tips is a very useful technique to boost the production of tea-leaves. This is because: -
(1) Gibberellins prevent bolting and are inactivated
(2) Auxins prevent leaf drop at early stages
(3) Effect of auxins is removed and growth of lateral buds is enhanced.
(4) Gibberellins delay senescence of leaves.

31. In order to increase the yield of sugarcane crop, which of the following plant growth regulators should be sprayed?
(1) Ethylene (2) Auxins
(3) Gibberellins (4) Cytokinins

NEET-UG 2020

32. The process of growth is maximum during :
(1) Dormancy (2) Log phase
(3) Lag phase (4) Senescence

33. Name the plant growth regulator which upon spraying on sugarcane crop, increases the length of stem, thus increasing the yield of sugarcane crop.
(1) Abscisic acid (2) Cytokinin
(3) Gibberellin (4) Ethylene

NEET-UG [COVID-19] 2020

34. Inhibitory substances in dormant seeds cannot be removed by subjecting seeds to :
(1) Gibberellic acid
(2) Nitrate
(3) Ascorbic acid
(4) Chilling conditions

35. Match the following concerning the activity/function and the phytohormone involved :-

(a) Fruit ripener	(i) Abscisic acid
(b) Herbicide	(ii) GA3
(c) Bolting agent	(iii) 2, 4-D
(d) Stress hormone	(iv) Ethephon

Select the correct option from following :-
(1) (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)
(2) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
(3) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
(4) (a)-(iv), (b)-(ii), (c)-(i), (d)-(iii)

NEET-UG 2021

36. Plants follow different pathways in response to environment or phases of life to form different kinds of structures. This ability is called :
(1) Elasticity (2) Flexibility
(3) Plasticity (4) Maturity

37. The site of perception of light in plants during photoperiodism is :
(1) Shoot apex (2) Stem
(3) Axillary bud (4) Leaf

38. The plant hormone used to destroy weeds in a field is :
(1) IAA (2) NAA
(3) 2,4-D (4) IBA

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NEET-UG [Paper-2] 2021

39. Which of the following is incorrectly matched pair?
(1) Ethylene – Cousins
(2) Kinetin – Skoog and Miller
(3) Gibberellic acid – F.W. Went
(4) Auxin – Darwin and Darwin

40. Match the columns I and II, and choose the correct combination from the options given.

Column-I	Column II
a. Zeatin	i. Tracheary element
b. Differentiation	ii. Secondary xylem
c. Auxin	iii. Cytokinin
d. Redifferentiation	iv. Indole

(1) a–iii, b–i, c–ii, d–iv
(2) a–iii, b–ii, c–i, d–iv
(3) a–iii, b–i, c–iv, d–ii
(4) a–iv, b–iii, c–ii, d–i

NEET-UG 2022

41. Production of Cucumber has increased manifold in recent years. Application of which of the following phytohormones has resulted in this increased yield as the hormone is known to produce female flowers in the plants:
(1) Gibberellin (2) Ethylene
(3) Cytokinin (4) ABA

42. Which one of the following plants does not show plasticity ?
(1) Coriander (2) Buttercup
(3) Maize (4) Cotton

43. The gaseous plant growth regulator is used in plants to :
(1) promote root growth and root hair formation to increase the absorption surface
(2) help overcome apical dominance
(3) kill dicotyledonous weeds in the fields
(4) speed up the malting process

Re-NEET-UG 2022

44. Which of the following growth regulators is an adenine derivative ?
(1) Auxin (2) Cytokinin
(3) Ethylene (4) Abscisic acid

45. The phenomenon by which the undividing parenchyma cells start to divide mitotically during plant tissue culture is called as :
(1) Differentiation
(2) Dedifferentiation
(3) Redifferentiation
(4) Secondary growth

46. The ability of plants to follow different pathways in response to environment leading to formation of different kinds of structures is called :
(1) Redifferentiation (2) Development
(3) Plasticity (4) Differentiation

EXERCISE-II (Previous Year Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	4	4	3	3	2	2	4	4	4	3	2	4	1	1	1
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	1	4	2	3	1	4	3	2	3	4	2	2	4	1	3
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	3	2	3	3	3	3	4	3	3	3	2	3	1	2	2
Question	46														
Answer	3														

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Exercise - III Master Your Understanding

EXERCISE-III (A) NCERT BASED QUESTIONS

1. Which of the following is a characteristic feature of meristematic cells ?
(1) Cells are rich in protoplasm
(2) Cell walls are primary in nature
(3) Presence of large conspicuous nuclei
(4) All of the above

2. Who isolated Auxin from tip of coleptiles of oat sedlings?
(1) Chales Darwin (2) Kogl
(3) F.W. Went (4) Skoog

3. 'Bakane disease of rice seedlings' was caused by *Gibberella fujikuroi'* Which is –
(1) a Bacteria (2) an Algae
(3) a Protista (4) a Fungus

4. Hormone, which is sprayed on young conifers to hasten the maturity peiod and early seed production, is –
(1) Ethylene (2) ABA
(3) Gibberellin (4) Cytokinin

5. Ethylene is used to initiate flowering and for synchronising fruit set in –
(1) Rice (2) Potato
(3) Pineapple (4) Cherry

6. Growth is measured by a variety of parameters, among following which is not included in these?
(1) Fresh weight (2) Dry weight
(3) Surface area (4) Cell type

7. Spraying sugarcane crop with gibberellins increases the length of the stem, thus increasing the yield by as much as :-
(1) 30 tonnes per acre
(2) 40 tonnes per acre
(3) 20 tonnes per acre
(4) 50 tonnes per acre

8. Among the following which is not present naturally in plants?
(1) Auxin (2) Gibberellin
(3) Kinetin (4) Zeatin

9. Among the following which is not a function of ethylene?
(1) Breaks bud and seed dormancy
(2) Promotes root growth
(3) Delay senescence
(4) Initiate flowering

10. Plants follow different pathways in response to environment to form different kinds of structures, that is called :-
(1) Plasticity (2) Senescence
(3) Photoperiodism (4) Vernalisation

11. Which causes fruits like apple to elongate & improve its shape ?
(1) Ethylene (2) Gibberellins
(3) Auxin (4) ABA

12. 2, 4-D is a :-
(1) Synthetic auxin (2) Natural auxin
(3) Synthetic cytokinin (4) Natural cytokinin

13. Which of the following increases the tolerance of plants to various kind of stresses?
(1) ABA (2) Ethylene
(3) Auxin (4) Cytokinin

14. Which of following is used to speed up the malting process in brewing industry ?
(1) Auxin (2) GA_3
(3) Kinetin (4) ABA

15. Cells/tissues arising out of the same meristem have different structures at maturity, this phenomenon in plants is called:-
(1) Open growth
(2) Open differentiation
(3) Indeterminate growth
(4) Determinate differentiation

16. The gaseous plant growth regulator ethylene could fit in the group of :-
(1) Plant growth inhibitors
(2) Plant growth promoters
(3) Both (1) and (2)
(4) Neither inhibitors nor promoters

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17. Which of the following physiological effects, is common to both Auxin and Ethylene?
(1) Sprouting of potato tuber
(2) Petiole elongation in deep water rice plants
(3) Flowering in pineapple
(4) Weed killing

18. Which of the following is not correctly matched?
(1) Delay leaf senescence ⇒ Cytokinin
(2) Induce rooting in a twig ⇒ Auxin
(3) Induce growth in axillary bud ⇒ Auxin
(4) Quickly ripen a fruit ⇒ Ethylene

19. Regarding factors affecting the development, PGR is the :-
(1) Extrinsic control
(2) Intrinsic intra cellular control
(3) Neither intrinsic nor extrinsic control
(4) Intrinsic inter cellular control

20. Arithmetic growth is related to :-
(1) $L_t = L_0e^{rt}$ (2) $W_1 = W_0e^{rt}$
(3) $L_t = L_0 + rt$ (4) $L_0 = L_te^{rt}$

21. The site of perception of light/dark duration are the:-
(1) meristems
(2) floral buds
(3) mature leaves
(4) lateral buds

22. Which statement is not correct about ethylene ?
(1) Synthesized in large amount by tissues undergoing senescence.
(2) Enhances respiration rate during ripening of the fruits
(3) Breaks dormany in peanut seeds
(4) Promotes male flowers in cucumber

23. Which of the following plant growth regulators is responsible for 'respiratory climactic' ?
(1) Auxin (2) Ethylene
(3) ABA (4) Cytokinin

24. (i) Promote nutrient mobilisation
(ii) Overcome the apical dominance
(iii) Lateral shoot growth
All the above physiological effects are related to which of the following plant growth regulators?
(1) Auxins (2) Gibberellins
(3) Abscisic acid (4) Cytokinins

25. Which of the following statements are correct regarding growth?
(A) In plants, the form of growth is open and localised
(B) Swelling of piece of wood in water is considered as growth since it involve the increase in size
(C) Growth is accompanied by metabolic processes
(D) Growth, at a cellular level, is a result of increase in the amount of protoplasm
(1) All the statements are correct
(2) A and B
(3) B, C and D
(4) A, C and D

26. Meristematic phase of growth is characterised by :
(1) Increased vacuolation
(2) Maximal size in terms of protoplasmic modifications
(3) Cells those are rich in protoplasm and having thin cell walls with abundant plasmodesmata
(4) Cell enlargement

27. Which of the following is/are related to the type of growth in which both the progeny cells, arise from mother cell, retain the ability to divide?
(A) Sigmoid curve
(B) expressed as $W_1 = W_0 + rt$
(C) Linear curve
(D) Three phases - Lag, exponential and stationary
(1) A and D (2) A, B and D
(3) Only C (4) B and C

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28. Match the following :

(A) Auxin	(i) Derivatives of carotenoids
(B) Gibberellin	(ii) Gas
(C) Cytokinin	(iii) Adenine derivatives
(D) Ethylene	(iv) Terpenes
(E) Abscisic acid	(v) Indole compounds

(1) A - i, B - ii, C - iii, D - iv, E - v
(2) A - ii, B - i, C - v, D - iii, E - iv
(3) A - v, B - iv, C - iii, D - ii, E - i
(4) A - iv, B - iii, C - i, D - ii, E - v

29. Math the following :

(A) Human urine	(i) Ethylene
(B) Coconut milk	(ii) GA_3
(C) Ripened oranges	(iii) Auxin
(D) *Gibberella fujikuroi*	(iv) Cytokinin

(1) A - iii, B - iv, C - i, D - ii
(2) A - i, B - ii, C - iii, D - iv
(3) A - iv, B - iii, C - ii, D - i
(4) A - ii, B - i, C - iv, D - iii

30. Match the following :

(A) Cytokinin	(i) Weed free lawns
(B) Auxin	(ii) Brewing industry
(C) Abscissic acid	(iii) Root hair formation
(D) Ethylene	(iv) Overcome apical dominance
(E) Gibberellin	(v) Stress hormone

(1) A - iv, B - i, C - v, D - ii, E - iii
(2) A - i, B - ii, C - v, D - iii, E - iv
(3) A - iii, B - iv, C - v, D - i, E - ii
(4) A - iv, B - i, C - v, D - iii, E - ii

31. Which of the following occur naturally in plants?
(1) 2, 4-dichlorophenoxyacetic acid
(2) Indole butyric acid
(3) Naphthalene acetic acid
(4) Kinetin

32. Plants, in which there is no correlation between exposure to light duration and induction of flowering response, are called:
(1) Day - neutral plants
(2) Long day plants
(3) Short day plants
(4) Monocarpic plants

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33. Which of the following is not a biennial plant?
(1) Barley (2) Sugarbeet
(3) Cabbages (4) Carrots

34. Swelling of piece of wood when placed in water is not considered as growth because:
(1) It does not occur at expense of energy
(2) It is not a metabolic change
(3) It is reversible process
(4) All of the above

35. Plant growth is unique because :
(1) It is intrinsic
(2) It occurs at the expense of energy
(3) Plant retains the capacity for unlimited growth throughout their life
(4) Its accompanied by metabolic processes

36. Growth at a cellular level, is principally a consequence of increase in amount of :
(1) Cell wall material (2) Water
(3) Protoplasm (4) Cell sap

37. Cells with increased vacuolation, cell enlargement and new cell wall deposition are the characteristic features of which phase of growth ?
(1) Meristematic phase
(2) Elongation phase
(3) Maturation phase
(4) Differentiation phase

38. Trees showing seasonal activities, represent what kind of growth curve ?
(1) Sigmoid (2) Linear
(3) J-shaped (4) Hyperbola

39. Quantitative comparisions between the growth of living systems can be made by :
(1) Absolute growth rate
(2) Relative growth rate
(3) Exponential growth rate
(4) Both (1) and (2)

40. Nutrients both macro and micro essential elements are required by plant during growth for:
(1) Synthesis of protoplasm
(2) As source of energy
(3) Enzyme of activation
(4) All of the above

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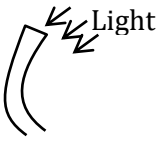
41. Parenchyma cells that are made to divide under controlled laboratory conditions during plant tissue culture, represents :
(1) Differentiation
(2) Dedifferentiation
(3) Redifferentiation
(4) Undifferentiated mass of cells

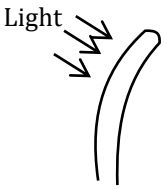
42. Select out the incorrect match :
(1) GA - speed up malting process
(2) Auxin - Xylem differentiation
(3) Cytokinin - Adventitious shoot formation
(4) Ethylene - Lateral shoot growth

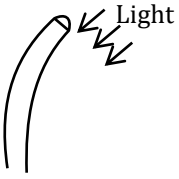
43. Removal of shoot tip (decapitation) is useful in :
(1) Promotion of Apical dominance
(2) Bolting
(3) Tea plantation
(4) Senescence

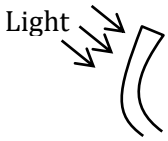
44. Which of the following phenomenon in plants requires interaction of more than one plant growth regulator :-
(1) Dormancy in seeds/buds
(2) Apical dominance
(3) Senescence
(4) All of the above

45. Which of diagram is **correct** about the curvature of coleoptile ?

(1) 

(2) 

(3) 

(4) 

46. Which of the following is/are correct about 'kinetin' ?
(1) Kinetin occurs naturally in plants
(2) It is a modified form of a purine
(3) Isolated from herring egg DNA
(4) All of the above

47. Which of the following plant growth regulators (PGRs) belongs to that group of PGRs which play an important role in plant response to wounds?
(1) Auxin (2) Gibberellin
(3) Cytokinin (4) Abscisic acid

48. Which of the following plant growth regulators is synthesised in large amounts by tissues undergoing senescence and ripening fruits ?
(1) Gibberellin (2) Zeatin
(3) IBA (4) Ethylene

EXERCISE-III(B) ANALYTICAL QUESTIONS

49. Select out the incorrect match :-
(1) Water → Cell enlargement
(2) Oxygen → Enzyme activation
(3) Minerals → Osmotic regulation
(4) Light → Flowering

50. Which of the following activities does not involve the role of GA?
(1) Seed germination
(2) Malting
(3) Root growth
(4) Flowering in LDPs

51. Removal of shoot tips (decapitation) usually results in the growth of lateral buds. It is related to the removal of effect of which plant hormone?
(1) Ethylene (2) Auxin
(3) Cytokinin (4) Gibberellic acid

52. Which plant hormone promotes the growth of lateral buds ?
(1) Auxin (2) Cytokinin
(3) Gibberellin (4) Abscisic acid

53. Which hormone pair is of hypothetical hormones?
(1) NAA, GA_3
(2) Florigen, vernalin
(3) ABA, kinetin
(4) 2,4-D, Gibberellin

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54. Photoperiodism was discovered by :-
(1) Lysenko, Klippart
(2) Borthwick, Hendricks
(3) Garner, Allard
(4) Singer, Nicolson

55. Hormone involved in induction of α-amylase in Barley endosperm :
(1) GA (2) NAA
(3) Ethylene (4) ABA

EXERCISE-III ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	4	3	4	3	3	4	3	3	3	1	2	1	1	2	2
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	3	3	3	4	3	3	4	2	4	4	3	1	3	1	4
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	2	1	1	4	3	3	2	1	4	4	2	4	3	4	3
Question	46	47	48	49	50	51	52	53	54	55					
Answer	2	4	4	2	3	2	2	2	3	1					

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Important Notes

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Important Notes